

## ABSTRACT

A gas concentration measuring apparatus which has a gas sensor designed to measure, for example, the concentrations of O<sub>2</sub> and HOx contained in exhaust emissions of an automotive engine is provided. The apparatus includes a signal processing circuit which converts a current signal outputted from the gas sensor as a function of the concentration of either of O<sub>2</sub> and HOx into a voltage signal. The gas sensor and the signal processing circuit are connected electrically through a conductor. The conductor has a length which is determined as a function of a level of the current signal outputted from the gas sensor. The weaker the level of the current signal is, the shorter the length of the conductor. This minimizes addition of electrical noises to the current signal outputted from the gas sensor.